



## Original research article

# Psycho-social disruption, information disorder, and the politics of wind farming

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## ABSTRACT

Problems of methodology often involve informational and interpretative problems that also affect the social lives of the people being studied and analysed. As such, these problems are inherently important in analysis of those social lives. This paper explores how recognising the problems of informational disorder, or '(dis)information', allow us to elucidate the informational dynamics of the Australian Senate Committee Inquiry into Wind Turbines and the contested ways it attributes causality and distributes responsibility about possible illness. The Committee's reports and testimonies offer an almost overwhelming source of information about struggles over new forms of energy technology and the ways they become enmeshed in disorders of information, interpretation, politics and the relations of psycho-social disruption produced by climate change. The Committee members appear to be relatively active players in the process, aiming at particular outcomes, and ordering and disordering the information under review. Here we have a series of social events that are already politicised, disruptive, unintended and uncertain, yet treated, by actors, as clear and pre-determined certainties.

## 1. Introduction: windfarms, inquiries and some problems of research

In Australia, windfarms have become a marked site of dispute about uncertain futures, and about the use of renewable technologies and their effects (see Section 3 below). While this dispute seems more intense than disputes over other sources of renewable energy, it ties into wider, generally politicised, configurations of conflict around *imaginings* of climate change, social order, economics, and the effects of supposed remedies. These imaginings operate within problems of information, and involve: theories about the world, interpretations of causality, predictions of the future in complex and uncertain situations, the inadequacies of models in complex systems, tendencies to over-order and simplify data, interpretations of psychological states, masses of conflicting information that crosses subject disciplines, political allegiances and contests, and the necessity of interpreting the actions of others within these frameworks (cf. Section 2).

These informational and imaginal disputes can be described as politicised, not just because mainstream political parties embrace conflicting views, but because the information is constituted and interpreted within political struggles, and these struggles and alliances spill out into the general populace with no generally recognised independent experts or referees. Complex political and informational events are also treated as though they were simple matters of fact that fit with pre-

existing certainties, when, as shall be argued, facts and evidence are uncertain to begin with, and are selected out by those pre-existing certainties. The conflict points to 'disorderly' features of the established social and information order, which influence both social research and social dynamics. Social groups attempt to use information which has already become political (because of its involvement in the crisis) to steer towards maintaining or increasing future social and economic power, security, meaning and (in this case) moving towards, or retaining, 'safe' energy supplies.

In such contexts, most information is incomplete and what is taken for information is not always completely accurate or involves interpretation based on politicised imaginings of what other people must be trying to do. Information, misinformation and disinformation appear inseparable and there is little knowledge that does not involve some ignorance, hence the use of the conjunctive term '(dis)information' to refer to this socially based and generated 'informational disorder'.

Devine-Wright et al. [1] suggest that "communication is central", to acceptance and rejection of renewables, as is understanding (28), along with questions about who says what, with what consequences (30). Slightly altering this emphasis, this research highlights patterns of lack of communication, misunderstanding, and disordering as equally important and necessary.

Recognition that boundaries between social and psychological become blurred is also relevant as climate change forms an 'existential

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crisis' [2] both personal and social. As Goodman states ([3]: 512) "the intense temporal logic of climate change creates a very specific and profound inter-generational existential crisis;" if we do not act *now* then change may reach catastrophic levels as the accumulation of change is unlikely to have smoothly linear effects. In this crisis, socially important ways of theorising, interpreting and acting in the world are challenged; from the social understanding of 'natural' ecologies and humanity's place in them, to the role of economics, consumerism, energy generation and development. Standard ways of proceeding, and being, are no longer non-problematic, or unchallenged; they may even be said to make conditions worse. While existential crisis can lead to new developments it can also lead to increased defensiveness, "converting such concerns into... more familiar and less threatening discourses" ([4]: 1657). Previous decisions seem imprisoning in the face of fear of the end, and paralysis may follow [5]. Sometimes the response to this crisis can seek to "stabilize an existing structure within a radically contingent world" ([6]: S65), as when policy failure does not produce "a radical reassessment of supporting assumptions or institutions" ([6]: S66). An existential crisis represents a 'psycho-social disruption', not just a social disruption.

Furthermore, the interpretation of social events by people and researchers often depends on implicit, or unformulated, psychologies, and this forms part of the (dis)informational background. Psychological motivations, or operations, can be implied by the theories being used to make sense of events but are rarely explicit enough to be tested.

Within the context of a special issue of *Energy Research and Social Science* considering problems of method and methodology in the social forms of climate and energy research, this paper presents a pilot study for ongoing research into the unintended (and disorderly) effects of renewable technologies. The current paper focuses on the politics of the various discomforts and sicknesses that have been classified as 'wind turbine syndrome', and the ways causality (psychological, political or physical) is attributed, as it was the area being most passionately argued and makes the epistemological points most clearly. The approach emphasises that the informational problems and uncertainties of such a study, constitute part of the dynamics of the social field being studied and are relevant to that field. Information is a problem for researchers, the Committee of Inquiry and anyone else interested in these problems.

The primary data source for research is the Australian Senate Select Committee Inquiry into Wind Turbines, which began on 24 November 2014, and issued its final report on 3 August 2015.<sup>1</sup> Most data comes from the Report and the official transcripts of the sessions in which the Committee interviewed people (the Senate Committee Hansard). The Report criticises windfarms on the grounds of health, planning, monitoring and compliance, effects on fauna, effects on aircraft and agriculture. It makes a series of recommendations which some thought could destroy the windfarm industry in Australia or strangle it in red-tape [7,8]. Such hostility was a strong interpretative framing and hostility to wind turbines was expected by many supporters of renewables. Three weeks before the reports' publication The Australian Conservation Foundation's climate change program manager Victoria McKenzie-McHarg [9] wrote:

It's hard to imagine a fledgling industry being attacked and undermined by a national government the way the renewables sector is by the Abbott Government.... [T]he Government... is essentially sending a message that Australia is not open for business if you are a wind developer.

The paper proceeds by firstly considering a small subset of eight problems of information and method, which seem important for both research and for the actions of those being researched. No claim is made for the originality of these problems. However, that they may be well

recognised does not detract from their importance. Second, a short history of Australian windfarms introduces the Senate Inquiry and briefly situates it within the politics of climate change (dis)information. This moves into a discussion of the ways the Report, and the testimony given to it, approach issues of health, sickness and interpreting psycho-social disruption. Third, the paper considers some informational problems with this informal joining of psychology and social science, looking at alternative explanations involving neoliberal development and 'distributed governance', as revealed in the testimony, and suggests that interpretation is incomplete without recognising psycho-social disruption. Finally, the aftermath of the Report is discussed along with the paradoxes of the solutions that arise from taking seriously the relationship between information, disinformation and 'distributed governance'.

## 2. (Dis)informational problems of research

### 2.1. Problem 1: theory dependence

The philosophical theory of the 'theory dependence of observation' can help to interpret some dynamics of information and experience. This theory of theories asserts that our theories about the world, our practices, and our tools of explanation and interpretation are not neutral, but guide human perception, or lack of perception, and that these theories are socially embedded ([10]: chapter 10). In this paper, the term 'theory' implies a fusion of ideation and practice (a kind of *habitus*), and this dependence affects both the analyst and the people being analysed. While there is some controversy around this position [11–14], it seems indisputable that theories and practices help people to observe in certain ways and perceive certain events while hindering observation in other directions. Additionally, humans tend to suffer from confirmation bias [15] which leads to the selection of confirmatory evidence and reinforces their theories. This can be increased by intergroup processes and conflict, as when support for particular (dis)information primarily acts to show loyalty and bonding to particular groups and identities [16,17]. None of this means there is no 'reality' or that the world is malleable to theory, just that human perception is influenced by beliefs. Theories, and the actions based upon those theories, can have unexpected consequences; hence there is a possibility of changing one's mind, if a person, or their group, is concerned about these consequences.

In the modern West, theory dependence often invokes 'causality' as a means of explanation or interpretation. People tend to interpret social events by making politics and human intention (perhaps as influenced by 'structures' of some kind), causal. Different politics involve different interpretations and attributions of, causality, as attribution of causality can imply responsibility and blame. Thus, in the case of climate change, the more pro-capitalist or pro-developmental a person is, the less likely they are to make either of those factors causal or responsible for climate change. They are more likely to deny climate change, blame it on natural processes, claim it is possibly beneficial, or say it can be cured by business and technology. The less pro-capitalist a person is the more likely they are to blame climate change on capitalism or current modes of action [18,19]. As will be suggested later, the Committee's opinions on windfarms followed these political divisions. This politicisation of (dis)information shapes the world, as actors perceive and understand it, with self-confirmation likely the more the (dis)information ties in with political identity groups [17].

### 2.2. Problem 2: societies are complex systems

In theory, technologies, and the responses to them, are embedded in many 'complex' systems. In these systems, the cause-result configuration of actions and events can be surprising, hard to distinguish and difficult to attribute accurately. Most events are multi-causal and complete causality is hard to trace. Furthermore, so many events occur

<sup>1</sup> [http://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Wind\\_Turbines/Wind\\_Turbines](http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Wind_Turbines/Wind_Turbines).

after the actions we are trying to evaluate, we cannot be sure of their relevance to those actions [20,21]. Prediction in complex systems is difficult. While we may predict trends (such as rising average temperature), we cannot predict what will happen (such as weather on a particular day) in detail. Prediction becomes more difficult the further ahead in time the prediction aims. Furthermore, ‘human reflexivity’ and shared (dis)information about how systems work, can change how those systems work, through the activities they promote [22,23].

All knowledge of complex systems is provisional, at best a useful simplification of their complexity. These factors increase the uncertainty of knowing when we have interpreted causality correctly, and the likelihood of people applying existing group-sanctioned ways of understanding.

Complexity inevitably increases uncertainty, and in discussions of Windfarms and climate change we can have uncertainty about: a) the specific consequences of climate change; b) the capacity of current ways of life to be sustained with changes in energy supply; c) the capacity of contemporary social life with its models of developmental growth to maintain environmental health; d) the effects of turbines on ecology; e) the capacity of ecologies to function when faced with particular or irreversible disruptions; f) the economic costs of acting or of not-acting; g) appropriate valuation of and compensation for loss; h) the uncertainties of ethics; i) the role of ‘unknown unknowns’; j) the constantly changing capacity of various humans to transform the world; and other factors. Because of complexity, it may not be possible to draw up a definite list of uncertainties, and we may not be able to specify research which gives information everyone can agree to, especially around safety when safety and risk are subject to ethical evaluation within the time required. The problem is compounded as uncertainties can appear different to people in different social positions who are likely to fear different consequences, or coming from different disciplines with different theory dependencies. Consequently, the Committee members and decision makers were faced with conditions of ‘strong uncertainty,’ as is common in ecological and economic fields – although often neglected in the latter [24], or “improperly translated into quantifiable risks and managed through the tools of statistical analysis and numerical simulation” ([25]: 338).

Recognising that we may not achieve total certainty of understanding, does not mean we face total uncertainty of understanding, but it could prompt us to become aware of the necessary limits of our knowledge amidst complexity, and the ease of assuming knowledge is more certain than it is. We do not need absolute certainty in order to make suggestions for action. Being aware of uncertainty merely reminds us we can be wrong or limited in our understandings, and that actions based on those suggestions will almost certainly need modification as we proceed and the systems change as a result.

### 2.3. Problem 3: over-ordering

Complexity, uncertainty and theory dependence imply that analysts and those being analysed will tend to simplify complexity in order to act, and thus over-order their views of reality and causation. For example, at the beginning of their book, which convincingly argues that windfarm sickness is delusional and ‘communicated’ (not ‘communicable’), Chapman and Crichton ([26]: xv–xxi) give a list of technologies which people feared but which turned out to be harmless. This generalisation is a reductive simplification. Some supposedly beneficial technologies can be harmful, both harmful and useful, or have their harms underestimated in advance. The automobile, for example, gives people freedom of movement, changes the outline of cities, produces invisible poisons, and maims and kills large numbers of the population every year. One possible causal interpretation for Chapman and Crichton’s simplification and (dis)information is that they *intend* to diminish reader’s fears about windfarms, and that this over-ordering causes them to unintentionally neglect disorder and distort complexity. The conventional rhetorics of argument can be a social and political

cause of (dis)information.

Over-ordering can generate moral problems, as well as problems of expertise. How do you explain ‘psychosomatic’ symptoms without apparently explaining them away, or diminishing, complainants? For example, I attended an event about windfarm sickness, where speakers said that people reporting symptoms must be listened to and treated with respect while, *in my interpretation*, the speakers rarely displayed any respect and made jokes about such people. In situations of complexity and strong uncertainty, it may be difficult for research to avoid conflict or being seen as one-sided, and this can affect likelihood of publication (see problem 8).

Most research is about discovering hidden order, and neglecting ‘disorder’, and yet disorder and surprise can be vital [27,28]. As complexity involves uncertainty and unintended consequences, disorder is likely to arise from attempts at ordering. Berg and Timmermans argue “with the production of an order, a corresponding disorder comes into being” ([29]: 36). If this is correct, then what is defined as ‘disorder’ in a situation, is as important as what is perceived as order. To understand the situation thoroughly, researchers may need to cultivate awareness of normal disorder, surprise and uncertainty as regular parts of the system, and not just seek order and ‘sense’. Being aware of the likelihood of unintended disorderly consequences resulting from the orders (political and interpretive) that one’s group favours, and the probable patterns of those disorders, may well draw attention to early signs, and help lessen or avoid those consequences.

### 2.4. Problem 4: method is necessarily provisional

Given complexity and disorder, method (and its theories) can limit what we will find, yet we cannot avoid method. John Law remarks “If the world is complex and messy, then at least some of the time we’re going to have to give up on simplicities” (Law [29]: 2). He adds that the “task is to imagine methods when they no longer seek the definite, the repeatable, [or] the more or less stable” (Law [29]: 6). Method and methodology may correspondingly need to be slippery and opportunistic, or at best oscillate between messy and rigorous, to deal with this process. Probably no overarching method can solve all the problems we face. Ideally, method should be able to change with the data, the problems and the experience of analysis. However, if researchers are open to methodological change or opportunism, they face unfamiliarity, more work and greater provisionality in results. Provisionality can seem disorderly and incomplete but allows more sensitivity to the disorders of life. Disorder in method could also mark incompetence, which seems why Doak et al.’s [27] surveyed ecologists did not report surprising events, and is perhaps why flexibility of method, theory, and interpretation was not noticeable amongst members of the inquiry.

This paper does not pretend to be more than provisional. It is not the imagined endpoint of unfinishable work. It relies on the collaboration of scholars and the hope of altering necessary ignorances as research progresses.

### 2.5. Problem 5: the mass of information

Information is unlimited. As is probably normal for such inquiries, my collected corpus in textual pdf and Word from the Inquiry, easily tops 1000 MB. This includes the reports, submissions, commentary and news surrounding the reports. Committee chair John Madigan said [30] they received:

nearly 500 submissions, 39 pieces of additional information, 82 responses to questions taken on notice, 46 tabled documents and significant additional correspondence from all over the world. Additionally the committee held hearings in Canberra on three occasions as well as sitting in Melbourne, Sydney, Adelaide, Cairns and Portland. We heard testimony from hundreds of witnesses.

Academic research adds still further words. Dealing with this mass

of information automatically generates problems of (dis)information, through theory dependent selection and suppression. No data selection is guaranteed to be fully representative. For example, due to lack of space, this paper mentions, without discussing in any detail, allegations that windfarms hurt local fauna. Such mass of data can lead to reinforcement of ignorance, due to increasing the importance of the filters we deploy to process it [31,32]. However, while the volume of data of the windfarm inquiry is overwhelming, it is not rich enough to discover all the psycho-social dynamics of those involved; these must be interpreted. Researchers have no privileged access to the ‘real’ beliefs of participants, or to knowing the psycho-social processes behind those beliefs. This is an everyday ‘social fact’, even though people may seem remarkably confident in their interpretation of people’s inner states, especially in political contexts. People can only guess or interpret the inner states of others using particular theories of human behaviour or relationship, which can further reinforce their theories of what is important (problems 1 and 8). We can note that some people on the Committee seemed concerned about windfarms and human health while *seeming* blasé about coal and human health, or that nearly the same people demanded that the precautionary principle be applied to windfarms, but not elsewhere. Such correlations could lead to conclusions about these people’s intentions, but those conclusions are still interpretations and could be incorrect. While interviews can be useful for dealing with such problems, people’s self-reportage may vary from occasion to occasion or be inaccurate (deliberately or otherwise). Because of these conditions (the mass and mess of information), research is again provisional and uncertain, even though we may aim at discovering regularities (of irregularity).

## 2.6. Problem 6: problems of transdisciplinarity

Social complexity and the mass of information implies research is inevitably transdisciplinary involving many different types of knowledge, and that knowledge will be incomplete. Many papers in this special issue make the general point that climate change and energy research require insights from many disciplines, and that this often presents problems. No individual, or group, can know enough to be sure their judgements and evaluations are entirely accurate, or whether it is possible to balance all the conflicting requirements of the situations they are in.

With millions of academic articles published each year ([33]: 7), the mass of information means that even experts cannot know everything in their own specific fields, never mind in all relevant or intersecting fields. Given the mass of information, there is also likely to be competing, elaborating or modifying information available somewhere. People can almost always find something to support their theories whatever they are. Hence bad information can drive out good, and information groups can come to live in a fantasy world, because there is so much persuasive and ‘apt’ information available for them to find, and because certainty can suppress discussion. To make well-informed judgements Committee members (and others) would have to be multi-disciplinary and able to evaluate many disciplines, or they would have to take shortcuts and accept testimony by experts whose expertise they would have to evaluate by what they already knew or hoped. In order to act, they have to take some understanding on faith. As we shall see, participants and analysts routinely used medicine to justify the sickness or lack of sickness associated with wind farms. Neither I, nor most of the participants, are medical doctors. Neither are we psychologists, yet psychological processes also become relevant to a full explanation of what is presented.

In this mass of information and multi-disciplinary world, uncertainty is not an addendum to knowledge, but part of its processing and production, and disagreeing interpretations of how reality behaves are almost inevitable. We cannot be total experts in everything, and perhaps not even in our own fields. However, just as the only alternative to total certainty is not total uncertainty, so the inadequacies of

expert knowledge does not mean total ignorance is advantageous, but it may well be advantageous to be aware of our likely ignorance and uncertainty when faced with complexity and information disorder. The suggestion of post-normal science theorists [24] that we should extend the peer review community beyond those who are specialists in the field, while drawing in other views, is unlikely to solve the problems of (dis)informational social conflict, because that conflict is already socially based and part of communication.

## 2.7. Problem 7: communication is political

A prime function of communication is persuasion or resisting persuasion, and hence politics [34,35]. While this may not be communication’s only function, it is an important one and documents like the Committee Report both originate, and develop, within (personal and social) political dynamics with particular aims, even to the attempted obliteration of other views. In this case, politics and persuasion (rhetoric) seems inherent in, and constituent of, what is interpreted and evaluated as (dis)information. These relatively standard features of communication appear magnified, in ‘information society’, by patterns of power relations, with many people seeming distrustful of ‘official sources’ or feeling they are ignored or victimised. Certainty and loyalty to particular types of information, the ‘information groups’ supporting it, and hostility to groups opposing it, provides status and marks exemplary membership, as well as helping to filter the huge amounts of information people could explore, while providing apparent order and foundations for action [31,36]. Finally, there are practical, ethical and political questions of what to do and how to balance competing people’s interests – especially when many appear uninterested in compromise, and seem to label disagreement as evidence of bad faith.

Political alliance seems a primary factor in interpreting (dis)information. Politically, people are more easily persuaded by someone who they put into the same categories as themselves, and less easily persuaded by those who are put in different, and especially opposing, categories [37]. Once (dis)information is caught in political struggle, there is little chance of restoring neutrality, partly because information is rarely conveyed unchanged from human to human, it is always *interpreted* within a context, and often in the context of struggle or rivalry. Similar processes of interpretation and loyalty fuel the ‘culture wars’, which have become transnational [38].

This political polarisation can lead to scientific knowledge being subject to radically divergent treatments depending on political allegiance, especially with climate change, where the established systems of action undermine their own order, and change challenges established powers [39,40]. Power can be used to create ignorance through suppression, and examples of politicised suppression are easy to find, although perhaps this information is also politicised. A member of President Trump’s team made it clear that they would not be engaging with the “heavily politicised” research about climate change from NASA, by which they appear to mean research they found politically unpalatable [41]. Information which treated climate change as real has been removed from US government websites [42], while reports claim that under President Trump the US Departments of Energy and Agriculture have been told not to use terms like “climate change” or “emissions” [43–45].<sup>2</sup> In Australia the climate-right prevented the post-2013 government from even discussing carbon pricing. It seemed that allowing the discussion of climate change and emissions costing was interpreted as showing disloyalty to the party by diminishing ways of attacking the Opposition. In general, information not approved by one’s own politics seems politicised. Power is based in (dis)information and persuasion as much as it is based in an establishment’s capacity for violence. If there is no belief in the ‘information’ justifying domination, then consent to, or acceptance of, that domination could dissipate. Furthermore, in this

<sup>2</sup> See also: <https://envirodatagov.org/website-monitoring/>.



kind of conflict, the sense that technology is ideological, while framed as ‘rational’, gains emphasis [46]. Established technology can become a mode of control associated with support for established orders, even if it is destroying them, while other technology can be interpreted as disrupting that order. Again, the main Committee tended to ignore problems with coal, while emphasising problems with wind turbines.

In this environment, social research becomes part of the political process, even if researchers have no intention of participating. Research deals with information which is rarely neutral. Researchers themselves are already politically sited with their own ingroups, outgroups and conventions, and will be interpreted in particular ways by others. Research must be judged as plausible in peer-review, probably by people who have not done exactly the same kind of work, and who have to be persuaded by its rhetoric of presentation. Methodology, itself, can problematically function as a way of preserving disciplinary group boundaries, rather than producing ‘excellence’ or ‘innovation’.

## 2.8. Problem 8: science, social science and interpretation

The anthropologist Clifford Geertz [47] argued, that in the social sciences, interpretation of data (as meaning and meaningful) is fundamental. Consequently, research can resemble literary criticism, poetics or translation, more than physics, and requires careful and slow ‘re-reading’ and growing hermeneutical understanding. Data arises within these processes of interpretation [48], as does local culture and communication. Interpretation further involves socially based modes of ‘framing’ communication. Framing invokes theories of causation, psychology, social placement of speakers, and situation ([49]: 184–92), which are tied in with the culture of both observed and observer, and with political process [50,51], so framing is tied in with theory dependence. Framing involves using (dis)information to make sense of (dis)information; consequently the meaning of (dis)information depends on other (dis)information. Knowledge and technology are “anchored in interpretive social understandings” and “always involve a social negotiation” or politics ([52]: 85). As Howe and Boyer [53] argue, wind power can mean different things to different people, and this variation of understanding may be vital for social dynamics. Lloyd [54] points to multiplicity of meaning as inherent and warns that “to elide all that diversity to get at some essential, core... is always going to be reductionist, always to miss the opportunity to explore other possible resonances and associations” (223). He suggests that we can “welcome that open-endedness as a positive resource for increasing understanding” (232). Whether this is correct or not, recognition of some degree of uncertainty in interpretation is fundamental. It may not always be possible to find an absolutely correct interpretation, but we can test to see if it is improbable, incoherent, or disjunct from the evidence. Consequently, this *initial* research is primarily qualitative, depending on description, interpretation and awareness of the difficulties of (dis)information.

## 2.9. Summary

Informational problems of method are ubiquitous, especially in so called ‘information society’ and in complex systems. Methods that assume informational resolution is possible with certainty are likely to distort the analysis of social processes. Methods need to recognise problems of coherence, observation, meaning, ignorance, uncertainty and so on, as part of the action in the field they are being applied to, as well as being part of analytical process. Social data is interpretative in its nature, and methodology needs to recognise the importance, and variation, of interpretations, including one’s own. In this situation, it seems that method should be exploratory, aiming, uncertainly, to follow the contours and gaps in too much and too little data, while being opportunistic, recognising that adaption does not end, and that all methods are incomplete and selective. Knowledge is provisional and limited, but these limits can be part of the analysis and seen as active in

the field. The researcher and people being studied are engaged in interpreting, using a social and political poetics and display of group membership which is rarely grounded outside of the social dynamics of interpretation. We can investigate the patterns of interpretation in use. Research necessarily simplifies but can refuse to theorise that any particular simplification is definitive and can be aware how the theoretical-practical-interpretive process shapes perception. Method needs to accept disorder, complexity and uncertainty as essential parts of human life, and not ignore that disorder in simplification. We should look for how information, and suppression of information, is used within political dynamics, rather than just at the supposed truth of the (dis)information itself. This approach can cause major problems for a researcher, if readers want certainty, or judge quality by expressions of certainty or political agreement. While no method can claim to be the final word on method which will satisfy all situations and times, it can understand that final words do arise within dynamics of power and boundary maintenance.

My method of procedure was to maintain awareness of these problems, and begin by reading the report, hoping that this would present the politicised dynamics of the enquiry (which it did, if probably in a simplified form). I then read the testimonies and questioning in the Hansard record, aiming to discover what seemed to be: a) incoherencies, b) removal of uncertainties, c) smoothing over disorders and so on. I then used the *factiva* search engine to find and read background material from the *Sydney Morning Herald* and *The Australian* newspapers, to uncover *some* of the hidden context. The keywords deployed changed as the contingencies of the data required.

The research does not pretend to be ‘hard science’ (however that is defined) but aims at increasing possible understandings and the awareness of complexities. While I may use NVivo or another tool in subsequent work, data handling tools do not get around problems of theory dependence, of meaningfully interpreting statements, of over-ordering, ignoring theoretical disorder, or exploring hidden dynamics (or openly proclaimed and inaccurate dynamics). While people using computer data analysis, or statistical methods, and allocating measures can seem to claim an objectivity they do not possess, such methods may well be useful for checking the analyst’s experience afterwards and adding to it (See [55]; Appendix 1).

It is possible to hypothesise that in a widespread, socially based, “existential crisis” that these informational problems may be intensified through group defence mechanisms. Rather than face the possible pain of uncertainty or generalised guilt, people may cling to theories, diminish complexity, reduce mess, over order and select confirmatory data, ignore provisionality, assume they can easily interpret knowledges they are not familiar with, enforce their correctness and certainty, while being closed to admissions of uncertainty in their interpretations of social others. However, this hypothesis itself is uncertain without careful interpretive psycho-social work of a kind impossible through texts.

Stating my own position, I am pro-windfarms, anti-coal, and desire successful renewable transitions. This placement will affect my interpretations of what is going on, and my placement in informational fields, whether I like it or not. However, this potential distortion should not be denied and it may be possible in particular social circumstances to be more or less ‘detached’ [56]. I can begin by being wary of what seems to be the standard pro-renewables mode of interpretation; that people protesting against windfarms are hypochondriacs, envious of those being paid for wind energy, deliberately deceitful, or putting their own selfish interests ahead of public good. These are viewpoints which have already politicised the holder’s understanding, and silenced voices by explaining them away. If ‘climate justice’ (whether procedural, distributive or otherwise) is relevant, then such a pre-judging and silencing in advance is presumably ‘unjust’. If we accept (dis)information as part of political process, then it is necessary to admit the possibility of problems with the social use of wind, however desirable that use appears to be.

### 3. Politics and the problems of information

#### 3.1. Background: wind, politics and environment

According to the Global Wind Energy Council, as of 2016, global wind installations reached a cumulative total of 486.8 GW. Wind power “contributed 5.3% of Australia’s total generation for the year,” providing a total capacity of 4.3 GW, less than 1% of the world’s total ([57]: 13, 28). By comparison, at the end of 2016, solar provided 6 GW of energy in Australia [58]. The distribution of windfarms is uneven, with South Australia the current leader. In South Australia wind has, on occasions, produced over 50% of large-scale generation according to the compiler of the National Energy Emissions Audit for the Australia Institute thinktank [59]. No other State comes near this, and there has been considerable hostility to these South Australian windfarms from the political right, who have blamed them for storm-based blackouts [60]. Anti and pro-windfarm positions (or as [61]: 196) prefers, ‘challenger’ and ‘proponent’ positions) seem to correlate with political alliances. In Australia, the left-leaning Labor and Greens Party support them and some action on climate change, while the right leaning Coalition of Liberal and National Parties generally oppose both. As of writing, the Coalition government appears extremely distressed that an uneconomic, out of date coal power station is being closed, and some of its Members are threatening its owner-operator with retaliation [62].

The first State government-built windfarm in Australia was set up in 1987 near Esperance in Western Australia [63], followed soon after by a demonstration site near Geelong in Victoria [64]. Processes to set up the first commercial windfarm in Gippsland in Victoria began in 1992. By 2015, there were over 52 functioning farms – nearly all commercial ([65]: 1). Problems and objections arose early on. With the Gippsland farm, it was noted; “Wind generation can be noisy and the farm would be placed away from residential areas” [66] and, “One of the more emotive arguments against wind energy is the visual impact the cluster of turbine-towers has on the landscape” [67]. While the Victorian government under Labor had offered to subsidise the Gippsland farm, the newer Coalition governments stated they “could not justify a \$25 million subsidy to an uncommercial project using limited new technology... when the state already had 30 per cent overcapacity” [68].

The Minister also said, “wind power had its own environmental problems, based on the appearance of the generators and their noise” [69]. In 1998 a windfarm in Portland, Victoria was challenged and eventually blocked by residents “concerned about the impact the wind turbines will have on coastal views and property values.” One local remarked about the “shocking visual... and noise pollution” [70,71]. In NSW, locals at Crookwell complained about the “desecration of beautiful country” and said that this could not happen in the UK as the “majority of wind farm proposals in England are rejected on visual grounds” [72]. In 2002 the South Gippsland Council requested the State Government to commission a study into the impact of windfarms “as a matter of urgency”, with the Mayor stating “I am very concerned about what the Prom coast will look like in 20 years’ time. If we keep saying yes, when do we say no?” [73]. In 2004, the then Coalition Federal government threatened to use rarely utilised powers under the Environment Protection and Biodiversity Conservation Act to stop windfarms because they might injure wildlife [74]. Local politics could apparently change rapidly; a newspaper article on the 3rd of September 2004 said that the “Waubra community is waiting in happy anticipation for the [Windfarm] project’s approval” [75], while on the 19th October the same journalist reported that “Neighbours who lived happily aside each other for generations no longer speak” because of divisions over the project [76]. The windfarm went ahead but, shortly after beginning operation in 2009, people reported being sick, with causality attributed to the possibility of sound outside audible frequencies. They also reported feeling better when they moved away. Other people complained

that the number of turbines surrounding them was far greater than expected [77]. In 2010, wind turbines became part of the Victorian election campaign, with the then Coalition Opposition declaring approvals should involve local councils, not the State government, with no new turbines to be built within 2 km of homes. “Clean Energy Council chief executive Matthew Warren said Mr Baillieu’s standards would make it harder to put up a wind turbine in Victoria than to dig a coal mine” [78]. The Coalition also promised an inquiry into Waubra [79]. By the end of 2010 the most effective wind-challenging organisation in Australia, the Waubra Foundation, had appeared. It has been accused of being an astro-turf body associated with politically active right-wing climate denial fronts ([26]: 186–90 [80]). Nevertheless, challenges to windfarms became marked, and the government proposed noise legislation which industry figures said would impose very significant costs on the industry [80]. Hindmarsh ([61]: 195) writes that “during the 5 months from January to May 2013 local actors were involved in at least four different [windfarm protest] actions”. In 2013 the independent leftish news site Crikey asked “How many Coalition MPs really support wind farms?” and found that “just one senior Liberal, Leichhardt’s Warren Entsch, has explicitly campaigned for more turbines,” while several Coalition MPs attended a “National Wind Power Fraud Rally” [81]. Two Senate inquiries were held in 2011 and 2012 [82,83] with another, the one this paper is concerned with, occurring in 2015.<sup>3</sup>

#### 3.2. The inquiry as political

Despite conceptual objections of the kind discussed in Section 2, it seems easy to accept that the Committee was driven by the theory dependence and political objectives of its members. This does not disqualify them from discovering *anything*, or render the Inquiry pointless; this is its normality. The immediate context seems to be that of a Coalition government, with a precarious majority, attempting to win favour with cross bench Senators. Chair John Madigan ‘Independent’ (ex DLP, Catholic conservative), a climate denialist associated with Lord Monkton, had a record of disliking wind turbines. Bob Day of ‘Family First’ (right-wing Protestant), member of the Rupert Murdoch funded Institute of Public Affairs (IPA), did not believe in anthropogenic climate change and opposed reduction of CO<sub>2</sub> emissions [84]. Chris Back, ‘Liberal’ (mainstream right-wing conservative), had worked in the oil and gas industry, and opposed the Renewable Energy Target (RET). Matthew Canavan, ‘National’ (coalition partner of the Liberals), was a climate sceptic, later Minister for Resources and Northern Australia, now supporting ‘next generation’ coal. David Leyonhjelm, ‘Liberal Democratic Party’ (‘libertarian’, pro-corporate, pro-market), was an IPA member and climate sceptic. Nick Xenophon another cross-bench participant, but not Committee member, had previously worked with John Madigan to ban wind turbines that exceeded the background noise by 10 decibels within 30 m [83].<sup>4</sup> It was always probable that the opposition Labor participants (only one a Committee member) would write a dissenting report, which is discussed later as exemplifying similar patterns of (dis)information.

The Coalition government had a history of hostility to climate change, and renewables. In February 2014 Tony Abbott, the then Prime Minister, chose climate sceptic Dick Wharburton to review the Renewable Energy Target [85]. While the Committee was in session, the Government asserted they would use a “technology neutral approach” to energy, which seemed to favour coal [86]. In October, the Prime Minister pronounced what seemed to be his governing theory:

<sup>3</sup> While this narrative emphasises political opponents to windfarms, Hindmarsh’s study [61] placed politicians as among the leading proponents of windfarms in media articles.

<sup>4</sup> For a general account of their voting patterns see <https://theyvoteforyou.org.au/>.

“Coal is good for humanity, coal is good for prosperity, coal is an essential part of our economic future” [87]. In short, Australia gained most of its energy from coal, and coal was not to be challenged. Mr. Abbott wanted a study into the health effects of windfarms from at least early 2014 [88]. Treasurer Joe Hockey announced he found “wind turbines around Lake George to be utterly offensive” [89]. In a radio interview, Abbot declared his aim was to “R-E-D-U-C-E, the number of [windfarms] that we are going to get in the future... I frankly would have liked to have reduced the number a lot more but we got the best deal we could out of the Senate and if we hadn’t had a deal..., we would have been stuck with even more of these things” [90]. The Government stopped the Clean Energy Finance Corporation from investing in wind energy [91,9]. The Inquiry’s recommendations were leaked to Government allies in *The Australian* newspaper [92,93], becoming part of that paper’s ongoing campaign against windfarms. No apparent enquiry into the leak occurred. There was never any appearance of neutrality.

With this cast and context, we could expect the official report would be hostile to windfarms. The mass of information almost demands filters, and ignoring of evidence, paradox or contradiction, especially if certainty and clarity is required. However, the Report also demonstrates incoherence in its reluctance to extend its recommendations elsewhere. Thus, despite the name of the proposed new research body, the Independent Expert Scientific Committee on Industrial Sound, which was to “conduct ‘independent, multi-disciplinary research into the adverse impacts and risks to individual and community health and well-being associated with wind turbine projects’ and conduct research on ‘any other industrial projects which emit sound and vibration energy’” ([94]: xv), it is easy to make the interpretation that the Committee’s theory dependence, and loyalty to established industries, frames noise as problematic for windfarms, but not for roads, rail, air traffic or other industries. The data is over-ordered, and blind spots are normal. The Report does not suggest that coal mining, which is harmful to human and animal health, should be subject to similar restrictions. This is so even when a group from the Hunter Valley, an area of heavy coal mining, remarks about the noise problems from venting fans in mines ([94]: 23), or a favoured expert witness testifies to the infrasound problems of mines ([95]: 8), or a resident remarks:

We know of people living near a coal fired power station in New South Wales near Lithgow, a gas fired power station at Port Campbell in Victoria, Uranquinty in New South Wales, and coal seam gas field processors in Queensland who have had the same problems we have had. They also need protection from the excessive noise pollution, just like we do ([96]: 81)

The duty of care and “the medical dictum, *primum non nocere*” (first do no harm), is applied to windfarms but not to coal ([94]: 5–6). The Report recommends, “State Governments [should] put in place a framework that requires windfarm operators to act in accordance with the proposed National Wind Farm Guidelines. If there is non-compliance with permits, there must be immediate, mandatory and appropriate consequences” ([94]: 147). This is not recommended for coal, or other potential health threats. They also suggest that windfarms cannot be accredited for the RET until they are “wholly constructed, fully commissioned and all post-construction requirements have been met” ([94]: xviii). Consequently, returns on investment can be lost before projects even begin, making investment difficult. Wind is restricted and penalisation almost assured.

However, despite these requirements, the Committee:

acknowledges the need for Australia’s renewable energy sector to develop and prosper. It also recognises that a properly regulated wind industry should be an important part of the sector’s future growth. However, the committee has been concerned that not enough is being done to promote the development of other renewable technologies ([94]: 4).

Notwithstanding these sentiments, there are no recommendations to

promote other renewables, just as there is no particular need for coherence. Perhaps this praise of renewables arises because renewables seem electorally popular, and the Government needs apparent neutrality to maintain electoral support.

Australia is frequently said to have the highest rooftop solar installations, per household, in the world [97]. One 2015 poll claimed that:

Renewable energy has topped the list [of environmental] issues for the last five years (in the [2015] study, 56% identify this as an issue to address)... [I]ncreased government investment in renewable energy sources was the most popular of a possible range of initiatives responding to... climate change ([98]: 4).

A Climate Institute poll reported ([99]: 2) “(84 per cent...) [of Australians] prefer solar... followed by wind (69 per cent...)... nuclear and coal now tie as least preferred sources of power.” The same poll states that 63 per cent of those polled think the “government should take climate change more seriously” ([99]: 1).

Another poll by the Lowy Institute, ahead of the Paris negotiations, reported 63% of the population thought the Australian government “should commit to significant reductions so that other countries will be encouraged to do the same” ([100]: 13). The most recent Lowy poll states that 84% of people polled chose the option “The government should focus on renewables, even if this means we may need to invest more in infrastructure to make the system more reliable” rather than the option of “The government should focus on traditional energy sources such as coal and gas” ([101]: 13). Such views have not been shared by the Australian Government since the Coalition came to power in 2013.

This interpretation of the Committee’s incoherence, and its causes, is an interpretation and, in the context of events, is politicised, *even if correct*. The Inquiry may simply suffer psycho-social disruption, as we might expect, when faced with an existential crisis like climate change, in which the established mode of energy ordering produces destabilising disorders, and they are driven to defend the disorder generators, who they see as allies. As such, the Inquiry expresses contradictions in neoliberalism, as the established business framework is disrupting the conditions for its survival, and requires governmental support to keep its dominant place in market competition. Without certainty and dismissal of (dis)information, conceptual crisis could arise. However, these assertions depend on an interpretive theory of psychology in politics; they are not inevitable truths.

### 3.3. Health: politics and evidence

Health is the first area of committee concern, yet immediately produces (dis)informational conflict, because the position of ‘official medicine’ is that there is no known connection between windfarms and ill-health. Probably as a matter of strategy and the promotion of over-ordering by discrediting opposition, the Report is overtly hostile towards bodies like the National Health and Medical Research Council (NHMRC) and the Australian Medical Association (AMA), who assert this ‘official’ position. These bodies are attacked by the Report as elitist and unconcerned ([94]: 24ff.), and it is often easy to agree with these interpretations, given the writing style the bodies deploy. The AMA also refused to send a representative to testify or engage with the Committee ([94]: 24). I have not been able to find out formal reasons for the refusal, although a later informal document suggests the expectation that the government would not listen [102]. There was apparently no attempt at dialogue on either side. In the final report, the Committee remarks: “Rightly, the AMA’s statement received pointed criticism from submitters and witnesses” and quotes someone claiming that the AMA’s statement, acknowledging more general problems of pollution, is “a thinly veiled political manifesto about climate change... not stand-alone science” ([94]: 25). Connections with climate change seem to be



perceived as proving the AMA's position is political. This might be seen as over-ordering data. It is easily possible to interpret the cause of the other side's 'hostile' (dis)information as their politics. The Report continues by saying that far "from it being a considered and cautious assessment of primary evidence, it is simply slavish repetition of the findings of the NHMRC's reviews" ([94]: 27). In this framing, the two organisations agreement becomes lack of independence, and perhaps conspiracy, rather than evidence about the state of knowledge. Opponents of the NHMRC report argued that it eliminated whole swathes of publications, leaving it with 17 papers to review, out of a couple of thousand ([94]: 29–33). It was easy for them to make the interpretation that this exclusion was carried out "to ensure these studies were never included because they would damage the commercial interests of the wind industry" ([94]: 34), or that the report was politicised "to a point where health and medicine have been side-lined" ([94]: 36). However, the Committee only used commercial and political interests to interpret one side of the argument, despite these interests being present on both sides. The Committee further seized on testimony opposing the NHMRC to declare there is a "lack of any professional consensus on this issue" ([94]: 12). Given the mass of information, opposing claims can always be found. Perceptions of politicisation also led to the Public Health Association of Australia receiving an intense cross-examination. Their attempts to take complaints seriously, without making symptoms purely physical, appeared unacceptable to the Committee. They were required to show that none of their members had ever accepted sponsorship from the wind industry ([103]: 43ff.). Non-binary positions rarely seem creditable in (dis)information society, perhaps as that might risk dialogue or admission of uncertainty. At the very least, filters, based in group loyalty, and theory dependent suspicion of renewables were reducing and over-ordering, social complexity and the mass of information.

Reported health symptoms are varied and include "tinnitus, raised blood pressure, heart palpitations, tachycardia, stress, anxiety, vertigo, dizziness, nausea, blurred vision, fatigue, cognitive dysfunction, headaches, nausea, ear pressure, exacerbated migraine disorders, motion sensitivity, inner ear damage and worst of all, sleep deprivation" ([94]: 13). Other testifiers report hearing loss near windfarms, chest pains and so on ([94]: 15). Anti-windfarm-syndrome writer Chapman [104] lists 247 claimed symptoms, concluding there is no pattern at all. The symptoms seem vague, wide ranging, with few apparent measurable bodily markers ([26]: 56ff.). The inquiry does not recommend a control study to see how present these symptoms are in the population in general. We may interpret that their strategic ignorance could be useful to their struggle.

A 'CEO' of a health consulting firm claiming to have conducted interviews all over the world said the symptoms are present everywhere near wind turbines.

We... conducted interviews in 15 different countries. Most of the people we interviewed expressed that they were in favour of wind energy prior to wind turbine construction nearby. There are some common symptoms people the world over report who live and work too close to wind turbines ([94]: 16; [105]: 1–4).

However, the Labor senators add that this CEO:

was unwilling to provide the name of her company to the committee [and]... unwilling to provide the committee with transcripts of these interviews or with the names of the interviewees.... the subjects of her interviews were a self-selected group with pre-existing grievances about wind farms ([94]: 217; see [105]: 4–5).

Both sides frame the information of the other side as political. From this witness's point of view perhaps the windfarm 'establishment' could harm her sources. Given the politics and hostilities involved in the interpretation of information, suspicion or 'paranoia' ([106]: [36]: 24), is never far away, as with the Committee's treatment of mainstream medicine. Alternatively, perhaps her companies do not exist.

Explanations given for how windfarms could affect people physically seem mostly untested hypotheses and, where tested, are not tested well, as is normal in strategic communication. Explanations largely depend upon the idea of 'infrasound' (low frequency sound) having a special set of signatures when originated by windfarms and travelling further than higher spectrum sound waves ([94]: 85, 87; [95]: 2–3). No tested causal pathway is proposed. The Australian Association of Acoustical Consultants claims infrasound:

is generated by both natural sources (such as people, wind, waves, thunder and earthquakes) and mechanical sources (such as fossil fuel power generation, travelling in a car with windows open, traffic, industry, air conditioners, aircraft and wind turbines). Investigations have found that infrasound levels around wind farms are no higher than levels measured at other locations where people live, work and sleep ([94]: 209).

Infrasound seems normal in contemporary society, but the Inquiry and its favoured witnesses make turbine sound special to allow it to become an interpretative cause.

Whatever the scientific evidence, the testimony of those affected can sound desperate.

The Oaklands Hill Wind Farm... began operating in August 2011.

By September 2011, one of our sheepdogs became severely affected. Soon after, we both started to experience physical changes. I began to wake suddenly at night with heart palpitations, and my wife started to experience humming and vibration in her ears and waking up frequently at night. We notified AGL [the owner of the turbines]<sup>5</sup>, and they conducted noise testing at our woolshed and home. AGL identified what they termed a tonality problem... In April 2012, we found deformed lambs, something we had never seen before in all our years of farming. By marking time, we found the mob closest to the turbines had lambed at the rate of only 37 per cent, down from a normal average of 85 per cent ([95]: 45–6. Cf 52, 58).

The indifference of authorities can appear to confirm hostility. One witness effectively demonstrates 'paranoid' interpretation, and the difficulties of interaction with official sources, by saying:

The AMA have been repeatedly asked by people impacted by wind turbine noise to come and visit them, listen to their stories and listen to their own doctors. There are a number of doctors who have been prepared to stick their heads up above the parapet and say, 'I believe my patient is impacted by wind turbine noise.' Many of the people I speak to say that their doctors are not prepared to put that opinion in writing because they have seen what has happened to me and they are very concerned that they will be attacked, denigrated and publicly vilified and have their reputations smashed in the media. I can understand why the treating doctors are reluctant to put some of this in writing. For the Australian Medical Association to have come out with that position statement, in the face of the evidence that it was subsequently presented with, and refuse to either change it or investigate it, I think it reflects very poorly on the organisation.... I should add that I have written on a number of occasions to the AMA and I am yet to receive any response whatsoever from them ([105]: 44).

Using what seems like a similar strategy (we are virtuous, the opposition is bad), the Committee declares its own compassion, writing it is:

disappointed that renewable energy advocates, wind farm developers and operators, public officials and academics continue to

<sup>5</sup> One of Australia's biggest power companies which used to be primarily a gas company, hence the original name: Australian Gas Light Co.



denigrate those who claim that wind turbines have caused their ill health ([94]: 17).

The Committee appeals to the common experience that ‘experts’ ignore people to support profit, again without extending this frame to the supporters of those challenging windfarms, or to business generally. After the inquiry, the Chair John Madigan, again used the claim of independence from commercial influence as ‘evidence’, saying:

I strongly encourage reading the submissions and transcripts of evidence that were obtained at the hearings. These are the stories of the people who are dealing with wind turbines at ground zero, not from an ivory tower in the middle of Sydney. You will read testimony of sleep disturbances, compromised health and reduced amenity.... For anyone who is genuinely interested, who can think independently and is not blindly obedient to the ideological spin put out by the wind industry and its propagandists, take a look at the report and the committee's work [30].

Those in favour of windfarms, including the Labor report, *do* appear to interpret this distress away. They use terms like ‘annoyance’, ‘anxiety’, or ‘nocebo’ (the opposite of a placebo, where “expectations of developing symptoms can become self-fulfilling” ([107]: 5)). They invoke countries which are said to have no sickness (ignoring witnesses who object to this, or records of protest in other countries). Simon Chapman testifies that the sickness is “best understood as a communicated disease that exhibits many signs of the classic psychosocial and nocebo phenomenon where negative expectations can translate into symptoms of tension and anxiety” ([94]: 18, 212, 213). As discontent or fear generates an increased form of symptom reporting, they can interpret, or blame, the whole thing as based on sensitivities being stirred by opposition groups ([94]: 212–14), which seems slightly circular without investigating why the groups are opposing windfarms<sup>6</sup>. Some interpretations make people not being paid for the noise or being envious of neighbour's income the ultimate cause ([26]: 80ff.). This perhaps buys into the neoliberal ideology that all people value is money, deleting any other concerns. In the same way that infrasound is applied to justify a political hypothesis, these psychological explanations (from nocebo to envy) are deployed without verified causal pathways, and not researched *in the field*, although some are researched in the different context of a laboratory. We do not understand how placebos or nocebos work well enough to consistently use them for good, so using them to explain the bad, is ambitious at best. This diagnosis certainly does not lead to people feeling they are being listened to, and sounds like a dismissal (even when carefully stated not to be) because any disturbance is being framed as unreal. Conversely, those who challenge windfarms do appear to listen to their distress.

One of the testifiers remarks that this nocebo theory “completely fails to consider the many cases where communities have initially welcomed the introduction of wind turbines” ([94]: 18). He instances “one island community in Vermont” and states, “A nocebo effect is when there is prior anticipation of a problem, not when the problem is noted after the event” ([108]: 2). It is suggested that it is not simply lack of financial advantage, as one farmer with a windfarm on his property received \$2 m over five years, and still found noise an issue ([94]: 14). An acoustic consultant argues that:

Nocebo is the wrong word. It is very simply a bastardisation of a term invented for nefarious purposes to attempt to invoke some sort of pseudoscientific authenticity.... [I]t fails because it cannot account for those who were pro-turbine prior to commissioning only to experience adverse health effects post-commissioning... We have

animals affected by this. Normally we would believe that animals are not really susceptible to media hype... the fallacy in the logic is that, just because you have proposed one theory to explain the phenomenon, that does not mean [it is the only one] ([109]: 10).

In this view, the idea of nocebo depends on filtering data through the theory dependence of analysts. ‘Nocebos’ might also work through theory dependence focusing people's attention on symptoms and setting up a search for them, but it is hard to test theories of theory dependence.

Problems arise over what counts as evidence amongst the mass of information. The Labor senators report a Canadian study of 1200 homes at varying distances from windfarms, with medical testing of subjects, as their exemplar ([94]: 210). This is ignored by the main report even though some witnesses testified about its problems ([109]: 9–11; [105]: 10–11, 71, 73). This study seems unobtainable, which is unusual for scientific research. Even witnesses refer to summaries (cf [110,111]). The main committee selected a report from Steven Cooper on six people (hardly a large sample) reporting symptoms near the Cape Bridgewater windfarm, which had received supportive publicity in the Murdoch owned and controlled pro-right newspaper *The Australian*, as part of its war on wind, and which claimed to measure a new type of infrasound. The newspaper described the research as “groundbreaking” and as establishing a causal connection, even though sickness sensations were experienced when the turbines were not turning ([94]: 221–224 [112–114];). The newspaper appeared to encourage potential lawsuits against a television program called Media Watch which challenged their reporting on this matter [115,116]. Committee members could also be interpreted as implying threats against companies who ignored these particular findings. (Dis)information has consequences:

what [Cooper] has identified is a potential new source of vulnerability for your company in that there is a new source of harm to consumers, called infrasound.... If I were in your shoes, I would be concerned that, in due course, a tort liability would emerge out of this.... Do you share that concern? Do you intend to do anything about it? ([95]: 16).

As pointed out by others, evidence for the harmful effects of infrasound is considerably less than the evidence for the harm of climate change which is regularly disputed by *The Australian*. Oddly, Cooper agreed “that the report does not recommend or justify a change in regulations” and that it “was not a health study and did not seek or request any particulars as to health impacts” ([95]: 3–4), which appears to diminish its impact.

It is of course hard to prove a negative, even if windfarm workers seem immune (infrasound could primarily affect the old, young or unhealthy). However, acceptance or rejection of information seemed to depend more on group alliance and rejection, than on dialogue or exploration. In this situation, getting what all would recognise as an independent report was practically impossible, no matter how many participated.

## 4. Problems with explanation

### 4.1. Psychology

The nocebo argument is well established in the literature (see [26,65,117,118]). These studies portray wind health issues as purely psychosomatic, and can appear to assume that the researchers can interpret the psychology of people: a) they have met only briefly or not at all, b) from written, questionnaire, or interview testimony, or c) through studies of different people in the different context of a laboratory. Often the investigation could be perceived as aiming to explain away the distress associated with a technology conceived as beneficial or necessary. The psychological research does not establish causation, but interprets correlations between negative information

<sup>6</sup> At an anti-windfarm-syndrome event I attended, the speakers proclaimed that the people who initiated groups challenging windfarms were rich people whose scenic views were threatened. Quite why rich people should not object, or should not object to changes in the environment, was unclear.

about ultrasound and reported symptoms in laboratory subjects. Maybe correlation is significant without causation but, if so, then this should probably be admitted, rather than reducing distress to a mistake.

Reflexivity and complexity also seems important here, as knowing about the research, changes the results of the research. As Chapman [104] says:

In even the best of studies, it will be impossible to separate out nocebo effects from putative direct effects... this sort of research design will always be corrupted by wind farm opponents who, at the first hint of any wind farm development, move into a local area with the express purpose of alarming and frightening as many local residents as possible.

Research into the social world can change the behaviour of that social world by changing understandings and information, and render those theories inadequate or untestable.

Psychology is also immersed in politics. Batel et al. [119] point out that “it is crucial to acknowledge that individualist, realist perspectives within psychology construct the individual through a neoliberal lens” (730), and that most psychologies reduce complex social systems to individual responsibility. In this case, various individuals are held to be making themselves sick by emotion, rather than becoming sick through a systemic psycho-social disruption, or the existential crisis of climate change. However, even if the nocebo explanation may be correct, windfarms are still associated with ill-health and the suffering of some people, and so those people uneasy about windfarms may rationally feel that it is safer to be cautious and oppose them, given the record of corporate trustworthiness, and if distant people benefit while locals suffer (cf [120] on fracking).

Problems of implied psychological causal mechanisms are common in social theory, where it is usually just announced that social structures or processes translate into drives, imperatives, personality configurations or symbolic values. The theory of this translation is only rarely explicit. For such theories not to be ad-hoc speculations, we need to understand explicitly how ‘social structures’ work in with human psychology and conceptions, and feedbacks, and produce what in this case appears to be a psycho-social disruption. Providing such an integrating cross-disciplinary theory is beyond the scope of this paper, it is enough to suggest here that it could be needed.

#### 4.2. Developmentalism, alienation and exclusion

Adding to informational disorder, the pro-wind explanations fit in with an established pattern of what might be called ‘developmentalist science,’ or information generated to support state power and/or corporate profit. Particularly relevant in this context, is that the distorting of medical information and practice by profit seems common [121,122]. Mirowski [123] makes a general case for scientific distortion under neoliberalism. In these patterns of (dis)information, the risks, burdens and uncertainties of technology are often placed upon the relatively powerless [124]. Some survey research on windfarm syndrome seemed to be aimed at getting a particular result, rather than finding out what local people reported.

The survey demographics shows that 400 people in total were surveyed: 59 per cent of respondents lived over 15 kilometres from the proposed site and only 19 people surveyed (5 per cent) lived less than 5 kilometres from the proposed site... [A]round 2500 people live within 5 kilometres of the proposed site, with a total of around 3500 people within 10 kilometres ([94]: 70).

Reactions to science and technology may become ambivalent as their use (by powerful organisations) drives ecological despoliation, while revealing that despoliation’s existence ([52]: 90). “Science is now employed to solve new problems created by previous scientific ‘advances’, generating widespread questions about the status, purpose and legitimacy of scientific knowledge” ([120]: 1). Emphasising the

uncertainty, scholars of the German *Energiewende*, Morris and Jung-johann, suggest “we must consider cases in which the public is right and the experts are wrong,” especially if we want public participation in, and acceptance of, renewables ([125]: 106). Feenberg also writes: “technical politics reveals the existence of another kind of knowledge, a knowledge from below reflecting the experience of subordinate participants in technical networks... [who are] responsive to a broad range of values, not simply efficiency and control” ([46]: 10). Knowledge being official does not mean it is correct or non-oppressive. It could be correct *and* oppressive.

Experiences of oppression and being ignored seem magnified because the allocation of responsibility for developing windfarms uses patterns of power relations which we might call ‘distributed governance’. This is where many players interact and responsibility always appears elsewhere, or is disrupted by actions elsewhere, and where experiences of pain and victimisation seem irrelevant ([36]: 89ff.). Everyone who is plausibly responsible refers the complainant to someone else, making it hard to protest. With windfarms, authorities have overlapping responsibilities ([94]: 55–6) and pass the buck, local councils have responsibilities but cannot get relevant information, or are without the money or technical competency to protest ([94]: 57, 60, 90). In South Australia, one group of protestors say, “the State’s ‘fair and expeditious planning system’ comes at the cost of a total loss of rights for those who must live near wind power stations. There are no provisions for fair and reasonable objections to be made or acted upon when they are made.” ([94]: 61). “[T]here is no capacity in local planning laws to assess cumulative impacts—each development application must be assessed as a stand-alone application” ([94]: 66). Environmental standards can be suspended for operational reasons: a Pacific-Hydro executive said: “The landowner themselves are a turbine host and part of the conversation you have with them is to say: ‘Under... the standard, we would not be able to put turbines on your land. So you have a decision to make as the landholder about whether you want those turbines on your land [and ignore the standards]’” ([95]: 19). Furthermore, “Many submitters have expressed their concern at the lack of consultation by windfarm proponents both before a development application is lodged, and during the development application process” ([94]: 52). One person complains: “Throughout the planning process, they [the proposed windfarm operators] have tried to keep details as vague as possible and have avoided any meaningful stakeholder engagement” ([94]: 71). In one case, a picture was presented with seven turbines when the operator planned to put up 159 ([94]: 128). Gross [126], Hindmarsh [127] and D’Souza & Yiridoe similarly report studies suggesting that locals are routinely excluded from a largely hidden decision making process and their concerns dismissed ([128]: 264).

Confidentiality agreements are used, as appears normal in (dis)information society, to inhibit the flow of knowledge [36], and prevent neighbours or towns cooperating ([94]: 67–8). Companies can seem to lie routinely ([120]: 9). Some companies appear reluctant to interact with residents at all, other than on the company’s own terms ([94]: 69). Complaints were often not given an incident number or receipt, so tracking the company response was difficult ([94]: 113). The researcher Steve Cooper claimed he could not show the Inquiry some of his data because the company he did the research for owned it, which may not be the case ([95]: 9–11, 16–17). This kind of configuration makes protest difficult and may produce discontent; apparently sacrificing people for development.

In this configuration of (dis)information, important psychological and subjective experiences like relationship to country, loss of view, or sense of home can be declared irrelevant ([94]: 127), as windfarms seem far better than coal mines. Yet ‘place attachment’ is a central trope of social life (cf [129,130]), even if we don’t know how it works. Some philosophy [131] and social theory [49] suggest that the person’s self and mind extend into an ecology that includes social, communicative, environmental and other systems. Askland and Bunn [132] write about

the ontological trauma of environmental change. If so, ‘view,’ placement and configuration, is not a dismissible luxury but a necessary part of, or context for, human psycho-social functioning. Even in the best case, some disruption may be unavoidable, as the configuration of ecology makes a place suitable for windfarms, and the windfarms change the appearance of the ecology. Hindmarsh’s study of media stories finds that “spoils sense of place” was the most common objection to windfarms ([61]: 2016).

One thing we probably need to cultivate for ecological survival and sensibility is the sense of relationship and belonging to country, so that people will care for that country. In many cases ‘solutions’ can involve changing this relationship, without any acknowledgement of the distress, or disruption, produced. This is the paradox of industrial environmentalism: surviving may cause us to lose what we want to protect. Similarly, while windfarms may cause less damage to fauna than coal, skyscrapers, or transport, they may still correlate with problems. As one witness states:

Since the Macarthur wind farm started—and I try to use all these people’s own reports; they are the best thing to use—their reports have said that 45 wetlands were abandoned [by birds] in the first 12 months, and 25 of them were potential breeding wetlands, and no broilgas have successfully nested within six kilometres of turbines ([95]: 52).

Vagueness of power distribution, and ecological disruption, *may well* have as strong psycho-social effects as turbine noise, and probably should not be excluded from consideration.

The pro-windfarm Labor report ignores relationship to land, and simply asserts that windfarm operators do engage in community consultation ([94]: 237–9, 255), quoting windfarm associations to that purpose, and identifying company donations to community organisations as evidence of good faith and intentions ([94]: 239–40). This interpretation is not persuasive if you do not believe those good intentions, or if you think that good intentions may become secondary to profit, as seems normal in capitalistic processes.

Labor’s defence of windfarms begins with a view that business is virtue, and with wanting windfarms to be successful. It seems neoliberal in orientation (much more so than the more overtly right-wing committee members). For example, they quote the Clean Energy Council arguing that adopting the recommendations “would damage Australia’s international investment reputation” ([94]: 186), just as we are sometimes told that environmental protection might also damage that reputation, and they imply opposing senators are “out of touch with the business community”. This says nothing to those in local communities who may value other things more than money, and is likely to add to their alienation from windfarms and their promoters. For example, one witness says: “It is all about jobs, money and all that stuff. The environment is almost forgotten.... We have turned down eight turbines that could have been on our farm. We get sick of them saying it is all about money” ([96]: 15).

Labor further remarks how successful windfarms have been in the rest of the world.

Last year the entire electrical generational capacity of Australia’s national electricity market was matched around the world by the building of new wind farms.... 14 countries have more wind energy installed than Australia. Five countries have over five times as much wind energy installed than we do, even though we have one of the largest—and windiest—countries on the planet ([94]: 183).

Windfarms have “among the lowest levelised cost of any form of new electricity generation capacity, whether it be renewable or non-renewable” ([94]: 184). Windfarms create rent payments, jobs, and spending and therefore must be good, in the same way as coal mines are said to be good by their supporters. However, despite its plausibility, the theory that neoliberal developmentalism potentially alienates people also requires some kind of theory of psychological dynamics,

rather than an implicit theory assuming that alienation must be the case.

## 5. Aftermath

Oddly while the “committee is delighted that the Federal Government has agreed to the recommendations in the committee’s interim report”, nothing much happened. The NHMRC announced that it would allocate \$3.3 m for two university studies on whether the infrasound emitted from wind turbines affected health, sleep and mood [133], while other climate change research was cut. Again, the decision can be seen as political rather than as showing commitment to reality. In October 2015 an Independent Scientific Committee on wind-turbines was appointed, but to date has not published any reports or refereed journal papers as all the committee have other work [134]. A wind-farms’ commissioner was appointed and according to the end of 2017 report, over almost 2 years he received 163 total complaints, 96 of which were about unbuilt windfarms, and 8 of which were unspecified. 145 of these cases are now closed ([135]: 8). There is presumably not that much opposition to windfarms, as might be expected from the popularity of renewables, and the presence of the Commissioner may have made renewable companies more careful in their interactions with communities [136]. However, the regulatory instability may have diminished proposals for new windfarms.

## 6. Conclusion and solutions

This paper has taken eight problems with information and method and shown how those problems are also important factors acting within the field being analysed. Questions over theory dependence, complexity, interpretative attribution of causality, over-ordering of data, mass of information, disciplinary borders and ignorance, the politics of information and communication and the allocation of certainty amidst uncertainty, were all vital features of the Committee’s process and report. With both the Committee and windfarms, we are firmly in the (dis)information society. Both sides of the Inquiry appear to aim at producing certainties in an uncertain situation, and this disrupted their use of the (dis)information available to them. No neutral place appeared, from which to conduct accurately informed politics or research, and it is doubtful it could, given the apparent dynamics of that society. Political strategy, theory and allegiances were inherent in what counted as perception, knowledge, ignorance and deceit. It seems plausible to suggest that Committee members’ alliances with established modes of dominance and energy were backed by interpretive theories which sought problems with new modes of energy and found them; just as those supporting renewables found their evidence allowing them to dismiss problems with renewables and their contexts of implementation. The Committee is not issuing ‘propaganda’, but engaging in an inevitable (and politically oriented) struggle with (dis)information.

Despite the vagaries of information which have been discussed, people, including analysts, can often seem to act as if their interpretation of other’s behaviour was certain, and that ‘they’ know exactly what the other side is doing, when this knowledge involves interpretation, imagining and group loyalties. This is a problem both for method and for the reception of analyses based on recognising these uncertainties. It is possible to hypothesise psycho-social reasons for the acceptance of supposed certainties, but these explanations do not themselves escape political frames any more than other (dis)information. Perhaps paradoxically, what seems like a group allied with fossil fuels seemed better able to support their position by mobilising democratic or popular opposition through appealing to people’s sense of disruption and of being disregarded by the elites (commercial and otherwise) than were the pro-renewable groups who largely dismissed popular dissent, and could not apparently mobilise much in the way of popular defense. In information society, attack and suspicion seems easier than defence, especially when the defence is cast in neoliberal pro-business terms



which may have little appeal to activists.

Wind power does appear to present social problems. One problem could involve the way it was both implemented and defended as neoliberal necessity overriding any common good, and as a defacement of the environment meant to defend the environment. In this framing, the idea that people may have an emotional or aesthetic relation to the environment as part of their being and identity tends to be dismissed, even if it could be constructive. It often seems to be proposed that, if this relationship was an issue, it can be fixed with money. This (dis)information replicates some of the conditions for environmental destruction. The implementation of windfarms also seems to involve distributed governance, avoidance of responsibility and the sacrifice of some locals. This may not help the popularity of windfarms either. The current way of organising the production of renewables has helped drive the disorder of dissent.

The suggestion that wind farm protest and sickness have something to do with the way that people use the environment for their sense of self ('place identification') and something to do with neoliberal implementation and development practices, and a politics apparently aiming at disrupting renewables, does not contradict nor disprove, the idea of *nocebos*. Rather, it adds context, potentially widens the areas of application, and is less condemning of those sick. It hints at the dynamics of psycho-social disruption, and partly explains the activities of protest groups, which have been thought to ferment the *nocebo* effect, as being part of normal social-(dis)informational dynamics. To explain these events fully we may need this cross-pollination of explanation, and that will be the next step of this research, as will investigating the possible existential effects of anthropogenic ecological destruction.

The above formulation also suggests it might be possible to lessen some of the problems with windfarms by placing both power and energy in the hands of the local population as part of its relation to ecology, rather than keep it in the hands of business and State. This position accepts the psycho-social aspect of disruption, and recognises that energy is about social organisation, participation and sense of place, as much as about maintaining or challenging hierarchy and corporate profit [125]. Hindmarsh ([127]: 558) likewise suggests "collaborative community engagement rather than largely top-down inform-consult-involve participatory options." Although local people still have politics and conflicts, they might be less prone to ignoring fellow citizens and their environment than corporations driven by theories of profit and patterns of assuming that those who oppose them are ignorant. Locals should be better placed to deal with the unintended consequences that inevitably arise through complexity and those locals may face less 'distributed governance' and lack of responsibility in the locality. Some form of 'energy democracy' might be vital to the progress of renewables, although it will still have unintended effects and problems because of being embedded in complex processes. Morris and Jungjohann worry that progress in Germany may be disrupted by the current policy change from community-based renewables to corporately-based renewables, as large utilities have no incentive to destabilise existing sources of energy and have frequently worked to undermine renewables ([125]: 104–5). The Australian Climate Council [137] says that a growing trend of rural communities setting up their own wind and solar farms could generate thousands of jobs in regional Australia and reduce the social power of energy companies. However, there are currently only about 20 community energy projects operating across the country, and Tim Buckley from the Institute of Energy, Economics and Financial Analysis has wondered whether community energy projects would have the capacity to make a big difference in combating climate change [138]. If this is correct, energy democracy sets up a further paradox; transformation may only work and gain legitimacy with community involvement, but community involvement may dangerously slow things down. There may be no simple, non-paradoxical solution that appeals to all sides.

Without more research into how communities resolve these problems and deal with the unintended effects of moving away from fossil

fuels, and research into the psycho-social dimensions of these activities, it is likely further conflict, resistance and alienation will occur. Changing the developmental, economic and political context of social life seems necessary to successful use of wind turbines. It is otherwise doubtful we can deal with the problems of (dis)information and politics. Education, for example, is likely to be framed as propaganda by one side or another and ignored or resisted. Research is also conducted within politics and will generally be judged in contexts defined by those politics, or other politics of research. As seeking for certainty may distort understandings, we need more investigation of the (dis)informational problems identified here, and perhaps more tolerance of paradox and apparent contradiction. Theory dependence, complexity, over-ordering, avoidance of provisionality, mass of information, cross-disciplinary ignorance, politics of communication, uncertainty and interpretation are all important features of psycho-social life in (dis)information society. Awareness of these features needs to be factored into methods of research into the psycho-social disruptions of climate change, its effects on researchers and on those being researched. Provisionality is inherent, ensuring that research continues.

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